

PTO/SB/08B (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for Form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Complete if Known

Application Number 10/812,461

Filing Date 03/29/2004

First Named Inventor Hiroo Azuma

Art Unit 2811 2815

Examiner Name Unassigned

Attorney Docket Number CFA00070US

Sheet 1 of 3

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	1	D. Deutsch and R. Jozsa, "Rapid solution of problems by quantum computation", Proc. R. Soc. London, Ser. A 439, 553-558 (1992).	✓
	2	D.R. Simon, "On the power of quantum computation", SIAM J. Comput. 26, 1474-1483 (1997).	✓
	3	P.W. Shor, "Polynomial-time algorithms for prime factorization and discrete logarithms on a quantum computer", SIAM J. Comput. 26, 1484-1509 (1997).	✓
	4	L.K. Grover, "Quantum mechanics helps in searching for a needle in a haystack", Phys. Rev. Lett. 79, 325-328 (1997).	✓
	5	C.H. Bennett, et al, "Teleporting an unknown quantum state via dual classical and Einstein-Podolsky-Rosen channels", Phys. Rev. Lett. 70, 1895-1899 (1993)	✓
	6	D. Bouwmeester, J.-W. Pan, K. Mattle, M. Eibl, H. Weinfurter, and A. Zeilinger, "Experimental quantum teleportation", Nature (London) 390, 575-579 (1997).	✓
	7	A. Barenco, et al, "Elementary gates for quantum computation", Phys. Rev. A 52, 3457-3467 (1995).	✓
	8	Q.A. Turchette, C.J. Hood, W. Lange, H. Mabuchi, and H.J. Kimble, "Measurement of conditional phase shifts for quantum logic", Phys. Rev. Lett. 75, 4710-4713 (1995).	✓
	9	C. Monroe, D.M. Meekhof, B.E. King, W.M. Itano, and D.J. Wineland, "Demonstration of a fundamental quantum logic gate", Phys. Rev. Lett. 75, 4714-4717 (1995).	✓
	10	E. Knill, R. Laflamme, and G.J. Milburn, "A scheme for efficient quantum computation with linear optics", Nature (London) 409, 46-52 (2001).	✓

Examiner Signature	Date Considered 11/05
--------------------	-----------------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.



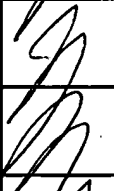
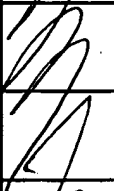
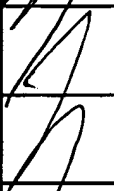
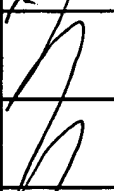
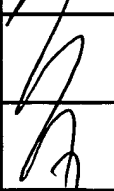
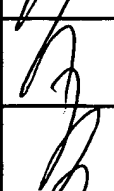
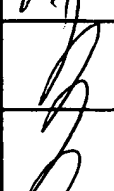
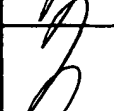
This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:


Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known	
		Application Number	10/812,461
		Filing Date	03/29/2004
		First Named Inventor	Hiroo Azuma
		Art Unit	2814 2815
		Examiner Name	Unassigned
Sheet 2	of 3	Attorney Docket Number	CFA00070US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	11	T. Yamamoto, et al. "Demonstration of conditional gate operation using superconducting charge qubits" Nature (London) 425, 941-944 (2003).	✓
	12	J.S. Bell, "Speakable and unspeakable in quantum mechanics" (Oxford, Oxford University Press, 1983).	✓
	13	C.H. Bennett, D.P. DiVincenzo, J.A. Smolin, and W.K. Wootters, "Mixed-state entanglement and quantum error correction", Phys. Rev. A 54, 3824-3851 (1996).	✓
	14	R.F. Werner, "Quantum states with Einstein-Podolsky-Rosen correlations admitting a hidden-variable model", Phys. Rev. A 40, 4277-4281 (1989).	✓
	15	S. Popescu, "Bell's inequalities and density matrices: revealing "hidden" nonlocality", Phys. Rev. Lett. 74, 2619-2622 (1995).	✓
	16	P.G. Kwiat, et al, "New high-intensity source of polarization-entangled...", Phys. Rev. Lett. 75, 4337-4341(1995)	✓
	17	D. Gottesman and I.L. Chuang, "Demonstrating the viability of universal quantum computation using teleportation and single-qubit....", Nature (London) 402, 390-393 (1999)	✓
	18	A.C. Elitzur and L. Vaidman, "Quantum mechanical interaction-free measurements", Found. Phys. 23, 987-997 (1993).	✓
	19	L. Vaidman, "Are interaction-free measurements interaction free?", Opt. Spectrosc. 91, 352-357 (2001).	✓
	20	P. Kwiat, H. Weinfurter, T. Herzog, A. Zeilinger, and M.A. Kasevich, "Interaction-free measurement", Phys. Rev. Lett. 74, 4763-4766 (1995).	✓

Examiner Signature		Date Considered	11/05
--------------------	---	-----------------	-------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Complete if Known	
				Application Number	10/812,461
				Filing Date	03/29/2004
				First Named Inventor	Hiroo Azuma
				Art Unit	2815 <i>2815</i>
				Examiner Name	Unassigned
				Attorney Docket Number	CFA00070US
Sheet	3	of	3		

[illegible]

Examiner Signature	<i>Hickson</i>	Date Considered	11/05
-----------------------	----------------	--------------------	-------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:**

Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.